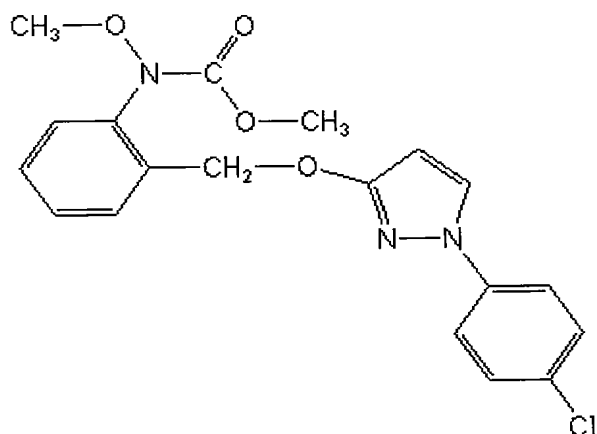


EXHIBIT A

pyraclostrobin

Chinese: 吡唑醚菌酯; **French:** pyraclostrobine (n.f.); **Russian:** пираклостробин

Status: ISO 1750 (published)
IUPAC: methyl 2-[1-(4-chlorophenyl)pyrazol-3-yloxymethyl]-*N*-methoxycarbanilate
CAS: methyl *N*-[2-[[[1-(4-chlorophenyl)-1*H*-pyrazol-3-yl]oxy]methyl]phenyl]-*N*-methoxycarbamate
Reg. No.: 175013-18-0
Formula: C₁₉H₁₈ClN₃O₄
Activity: fungicides (carbanilate fungicides; pyrazole fungicides; strobilurin fungicides)
Notes:
Structure:



Pronunciation: pīr-a-klō-strō-bīn Guide to British pronunciation

InChIKey: HZRSNVGNWUDEFX-UHFFFAOYSA-N

InChI: InChI=1S/C19H18ClN3O4/c1-25-19(24)23(26-2)17-6-4-3-5-14(17)13-27-18-11-12-22(21-18)16-9-7-15(20)8-10-16/h3-12H,13H2,1-2H3

A data sheet from the Compendium of Pesticide Common Names

fipronil

Chinese: 氟虫腈; **French:** fipronil (n.m.); **Russian:** фипронил

Status: ISO 1750 (published)

IUPAC: 5-amino-1-(2,6-dichloro- α,α,α -trifluoro-*p*-tolyl)-4-[(trifluoromethyl)sulfinyl]pyrazole-3-carbonitrile

CAS: 5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1*H*-pyrazole-3-carbonitrile

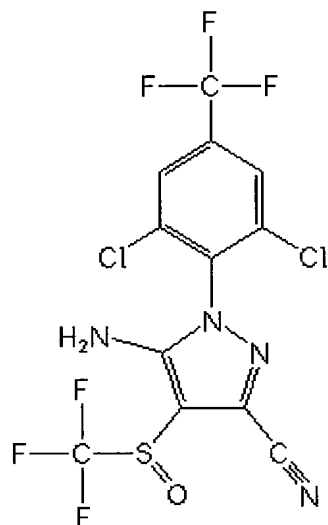
Reg. No.: 120068-37-3

Formula: C₁₂H₄Cl₂F₆N₄OS

Activity: acaricides (phenylpyrazole acaricides)
insecticides (phenylpyrazole insecticides)

Notes:

Structure:



Pronunciation: *fī-prō-nīl* Guide to British pronunciation

InChIKey: ZOCSXAVNDGMNBV-UHFFFAOYSA-N

InChI: InChI=1S/C12H4Cl2F6N4OS/c13-5-1-4(11(15,16)17)2-6(14)8(5)24-10(22)9(7(3-21)23-24)26(25)12(18,19)20/h1-2H,22H2

A data sheet from the Compendium of Pesticide Common Names

acephate

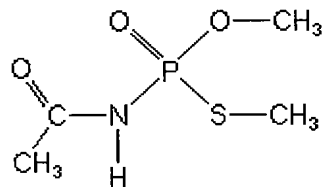
Chinese: 乙酰甲胺磷; **French:** acéphate; **Russian:** ацефат

Status: ISO 1750 (published)
IUPAC: (RS)-(O,S-dimethyl acetylphosphoramidothioate)
or
(RS)-N-[methoxy(methylthio)phosphinoyl]acetamide
CAS: O,S-dimethyl acetylphosphoramidothioate
Reg. No.: 30560-19-1
Formula: C₄H₁₀NO₃PS

Activity: insecticides (phosphoramidothioate insecticides)

Notes:

Structure:



Pronunciation: ä-sī-fāt

InChIKey: YASYVMFAVPKPKE-UHFFFAOYSA-N

InChI: InChI=1S/C4H10NO3PS/c1-4(6)5-9(7,8-2)10-3/h1-3H3,(H,5,6,7)

A data sheet from the Compendium of Pesticide Common Names

chlorpyrifos

Chinese: 毒死蜱; **French:** chlorpyrifos* (n.m.); **Russian:** хлорпирифос

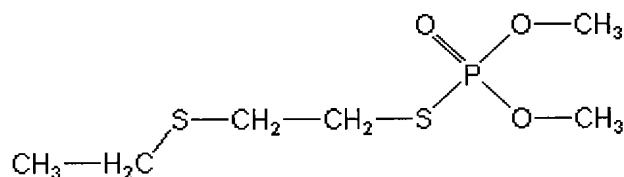
Status: ISO 1750 (published)
IUPAC: *O,O*-diethyl *O*-3,5,6-trichloro-2-pyridyl phosphorothioate
CAS: *O,O*-diethyl *O*-(3,5,6-trichloro-2-pyridinyl) phosphorothioate
Reg. No.: 2921-88-2
Formula: C₉H₁₁Cl₃NO₃PS
Activity: acaricides (

demeton-S-methyl

Chinese: 甲基内吸磷; **French:** déméton-S-méthyl (n.m.); **Russian:** дeмeтoн-S-мeтил*

Status: ISO 1750 (published)
IUPAC: *S*-2-ethylthioethyl *O,O*-dimethyl phosphorothioate
CAS: *S*-[2-(ethylthio)ethyl] *O,O*-dimethyl phosphorothioate
Reg. No.: 919-86-8
Formula: C₆H₁₅O₃PS₂
Activity: acaricides (organothiophosphate acaricides)
insecticides (aliphatic organothiophosphate insecticides)
Notes: The mixture with demeton-O-methyl has the BSI common name demeton-methyl.
* The name “methylmercaptophos thiol” (метилмеркаптофос тиоловый) was used in the former USSR.

Structure:



Pronunciation: *děm-ě-tõn ɛs mē-thīl* Guide to British pronunciation

InChIKey: WEBQKRLKWNIYKK-UHFFFAOYSA-N

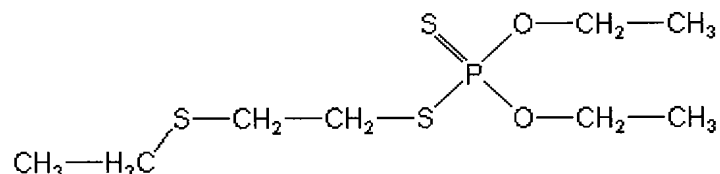
InChI: InChI=1S/C6H15O3PS2/c1-4-11-5-6-12-10(7,8-2)9-3/h4-6H2,1-3H3

A data sheet from the Compendium of Pesticide Common Names

disulfoton

Chinese: 乙拌磷; **French:** disulfoton (n.m.); **Russian:** дисульфотон

Status: ISO 1750 (published)
IUPAC: *O,O*-diethyl *S*-2-ethylthioethyl phosphorodithioate
CAS: *O,O*-diethyl *S*-[2-(ethylthio)ethyl] phosphorodithioate
Reg. No.: 298-04-4
Formula: C₈H₁₉O₂PS₃
Activity: acaricides (organothiophosphate acaricides)
insecticides (aliphatic organothiophosphate insecticides)
Notes: The name "M-74" (M-74) was used in the former USSR.
Structure:



Pronunciation: dī-sŭl-fō-tŏn Guide to British pronunciation
InChIKey: DOFZAZXDOSGAJZ-UHFFFAOYSA-N
InChI: InChI=1S/C8H19O2PS3/c1-4-9-11(12,10-5-2)14-8-7-13-6-3/h4-8H2,1-3H3

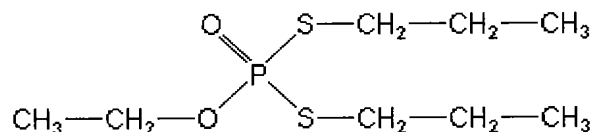
A data sheet from the Compendium of Pesticide Common Names

ethoprophos

Chinese: 灭线磷; **French:** éthoprophos (n.m.); **Russian:** этопрофос

Status: ISO 1750 (published)
IUPAC: *O*-ethyl *S,S*-dipropyl phosphorodithioate
CAS: *O*-ethyl *S,S*-dipropyl phosphorodithioate
Reg. No.: 13194-48-4
Formula: C₈H₁₉O₂PS₂
Activity: insecticides (aliphatic organothiophosphate insecticides)
nematicides (organothiophosphate nematicides)
Notes: The name “ethoprop” is approved by the American National Standards Institute and the Entomological Society of America.

Structure:



Pronunciation: ē-thō-prō-fōs Guide to British pronunciation

InChIKey: VJYFKVYYMZPMAB-UHFFFAOYSA-N

InChI: InChI=1S/C8H19O2PS2/c1-4-7-12-11(9,10-6-3)13-8-5-2/h4-8H2,1-3H3

A data sheet from the Compendium of Pesticide Common Names

fenitrothion

Chinese: 杀螟硫磷; **French:** fénitrothion (n.m.); **Russian:** фенутроцион

Status: ISO 1750 (published)

IUPAC: *O,O*-dimethyl *O*-4-nitro-*m*-tolyl phosphorothioate

CAS: *O,O*-dimethyl *O*-(3-methyl-4-nitrophenyl) phosphorothioate

Reg. No.: 122-14-5

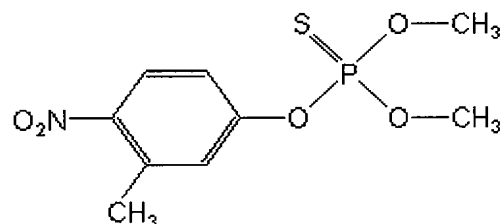
Formula: C₉H₁₂NO₅PS

Activity: insecticides (phenyl organothiophosphate insecticides)

Notes: The name “MEP” is approved by the Japanese Ministry of Agriculture, Forestry and Fisheries.

The name “methylnitrophos” (метилнитрофос) was used in the former USSR.

Structure:



Pronunciation: fĕ-nĭ-trō-thĭ-ŏn Guide to British pronunciation

InChIKey: ZNOLGFHPUIJIMJ-UHFFFAOYSA-N

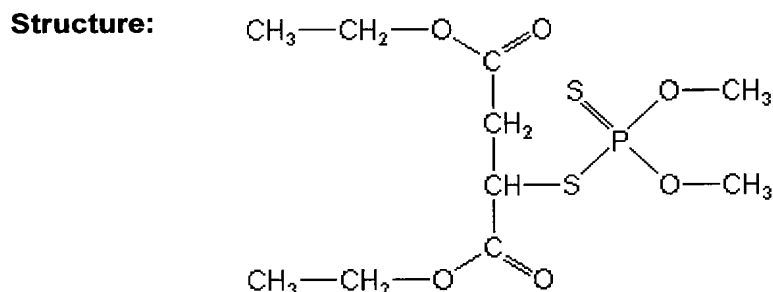
InChI: InChI=1S/C₉H₁₂NO₅PS/c1-7-6-8(4-5-9(7)10(11)12)15-16(17,13-2)14-3/h4-6H,1-3H3

A data sheet from the Compendium of Pesticide Common Names

malathion

Chinese: 马拉硫磷; **French:** malathion (n.m.); **Russian:** малатион*

Status: ISO 1750 (published)
IUPAC: diethyl (dimethoxyphosphinothioylthio)succinate
or
S-1,2-bis(ethoxycarbonyl)ethyl *O,O*-dimethyl phosphorodithioate
CAS: diethyl 2-[(dimethoxyphosphinothioyl)thio]butanedioate
Reg. No.: 121-75-5
Formula: C₁₀H₁₉O₆PS₂
Activity: acaricides (organothiophosphate acaricides)
insecticides (aliphatic organothiophosphate insecticides)
Notes: * The name “carbophos” (карбофос) was used in the former USSR.
The name “maldison” is used in Australia and New Zealand, and the name
“mercaptotion” is used in South Africa.



Pronunciation: mǎl-a-t̥hɪ-ɔ̃n Guide to British pronunciation
InChIKey: JXSJBGJIGXNWCI-UHFFFAOYSA-N
InChI: InChI=1S/C10H19O6PS2/c1-5-15-9(11)7-8(10(12)16-6-2)19-17(18,13-3)14-4/h8H,5-7H2,1-4H3

A data sheet from the Compendium of Pesticide Common Names

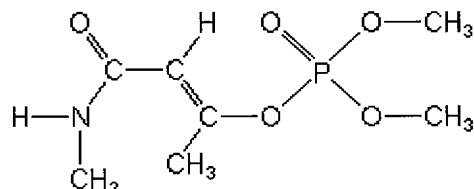
monocrotophos

Chinese: 久效磷; **French:** monocrotophos (n.m.); **Russian:** монокротофос

Status: ISO 1750 (published)
IUPAC: dimethyl (*E*)-1-methyl-2-(methylcarbamoyl)vinyl phosphate
or
3-dimethoxyphosphinoyloxy-*N*-methylisocrotonamide
CAS: dimethyl (1*E*)-1-methyl-3-(methylamino)-3-oxo-1-propenyl phosphate
Reg. No.: 6923-22-4
Formula: C₇H₁₄NO₅P
Activity: acaricides (organophosphate acaricides)
insecticides (organophosphate insecticides)

Notes:

Structure:



Pronunciation: *mŏn-ō-krō-tō-fŏs* Guide to British pronunciation

InChIKey: KRTSDMXIXPKRQR-AATRIKPKSA-N

InChI: InChI=1S/C7H14NO5P/c1-6(5-7(9)8-2)13-14(10,11-3)12-4/h5H,1-4H3,
(H,8,9)/b6-5+

A data sheet from the Compendium of Pesticide Common Names

parathion

Chinese: 对硫磷; **French:** parathion (n.m.); **Russian:** паратион

Status: ISO 1750 (published)

IUPAC: *O,O*-diethyl *O*-4-nitrophenyl phosphorothioate

CAS: *O,O*-diethyl *O*-(4-nitrophenyl) phosphorothioate

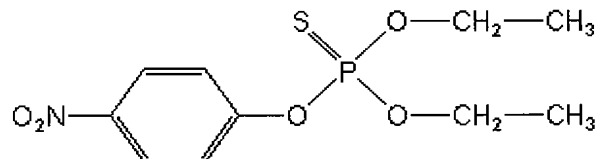
Reg. No.: 56-38-2

Formula: C₁₀H₁₄NO₅PS

Activity: acaricides (organothiophosphate acaricides)
insecticides (phenyl organothiophosphate insecticides)

Notes: The name “thiophos” (тиофос) was used in the former USSR.
The analogous dimethyl ester has the ISO common name parathion-methyl.

Structure:



Pronunciation: *pă-r-a-thī-ŏn* Guide to British pronunciation

InChIKey: LCCNCVORNKJIRZ-UHFFFAOYSA-N

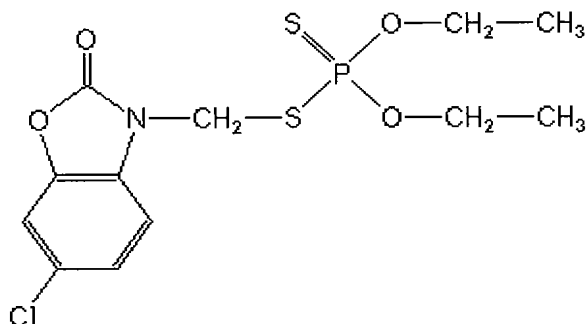
InChI: InChI=1S/C10H14NO5PS/c1-3-14-17(18,15-4-2)16-10-7-5-9(6-8-10)11(12)13/h5-8H,3-4H2,1-2H3

A data sheet from the Compendium of Pesticide Common Names

phosalone

Chinese: 伏杀硫磷; **French:** phosalone (n.f.); **Russian:** фозалон

Status: ISO 1750 (published)
IUPAC: *S*-6-chloro-2,3-dihydro-2-oxo-1,3-benzoxazol-3-ylmethyl *O,O*-diethyl phosphorodithioate
CAS: *S*-[(6-chloro-2-oxo-3(2*H*)-benzoxazolyl)methyl] *O,O*-diethyl phosphorodithioate
Reg. No.: 2310-17-0
Formula: C₁₂H₁₅ClNO₄PS₂
Activity: acaricides (organothiophosphate acaricides)
insecticides (heterocyclic organothiophosphate insecticides)
Notes: The name "benzophosphate" (бензофосфат) was used in the former USSR.
Structure:



Pronunciation: *fɔ̃s-a-lɔ̃n* Guide to British pronunciation

InChIKey: IOUNQDKNJZEDEP-UHFFFAOYSA-N

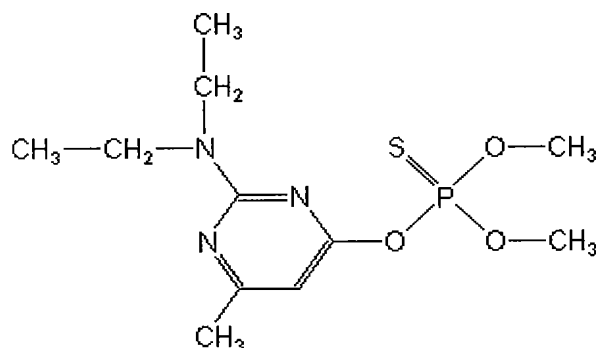
InChI: InChI=1S/C12H15ClNO4PS2/c1-3-16-19(20,17-4-2)21-8-14-10-6-5-9(13)7-11(10)18-12(14)15/h5-7H,3-4,8H2,1-2H3

A data sheet from the Compendium of Pesticide Common Names

pirimiphos-methyl

Chinese: 甲基嘧啶磷; **French:** pyrimiphos-méthyl (n.m.); **Russian:** пирими́фос-мети́л

Status: ISO 1750 (published)
IUPAC: *O*-2-diethylamino-6-methylpyrimidin-4-yl *O,O*-dimethyl phosphorothioate
CAS: *O*-[2-(diethylamino)-6-methyl-4-pyrimidinyl] *O,O*-dimethyl phosphorothioate
Reg. No.: 29232-93-7
Formula: C₁₁H₂₀N₃O₃PS
Activity: acaricides (organothiophosphate acaricides)
insecticides (pyrimidine organothiophosphate insecticides)
Notes: The analogous diethyl ester has the ISO common name pirimiphos-ethyl.
Structure:



Pronunciation: pī-rīm-ī-fōs mē-thīl Guide to British pronunciation

InChIKey: QHOQHJPRIBSPCY-UHFFFAOYSA-N

InChI: InChI=1S/C11H20N3O3PS/c1-6-14(7-2)11-12-9(3)8-10(13-11)17-18(19,15-4)16-5/h8H,6-7H2,1-5H3

A data sheet from the Compendium of Pesticide Common Names

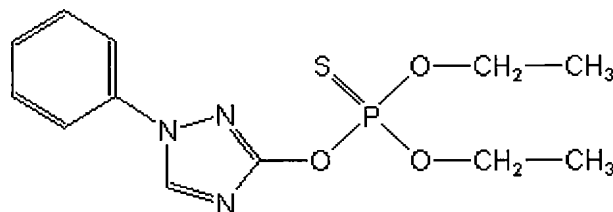
triazophos

Chinese: 三唑磷; **French:** triazophos (n.m.); **Russian:** триазофос

Status: ISO 1750 (published)
IUPAC: *O,O*-diethyl *O*-1-phenyl-1*H*-1,2,4-triazol-3-yl phosphorothioate
CAS: *O,O*-diethyl *O*-(1-phenyl-1*H*-1,2,4-triazol-3-yl) phosphorothioate
Reg. No.: 24017-47-8
Formula: C₁₂H₁₆N₃O₃PS
Activity: acaricides (organothiophosphate acaricides)
insecticides (triazole organothiophosphate insecticides)
nematicides (organothiophosphate nematicides)

Notes:

Structure:



Pronunciation: trī-āz-ō-fōs Guide to British pronunciation

InChIKey: AMFGTOFWMRQMEM-UHFFFAOYSA-N

InChI: InChI=1S/C12H16N3O3PS/c1-3-16-19(20,17-4-2)18-12-13-10-15(14-12)11-8-6-5-7-9-11/h5-10H,3-4H2,1-2H3

A data sheet from the Compendium of Pesticide Common Names

cyfluthrin

Chinese: 氟氯氰菊酯; **French:** cyfluthrine (n.f.); **Russian:** цифлутрин

Status: ISO 1750 (published)

IUPAC: (*RS*)- α -cyano-4-fluoro-3-phenoxybenzyl (1*RS*,3*RS*;1*RS*,3*SR*)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
or
(*RS*)- α -cyano-4-fluoro-3-phenoxybenzyl (1*RS*)-*cis-trans*-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

CAS: cyano(4-fluoro-3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate

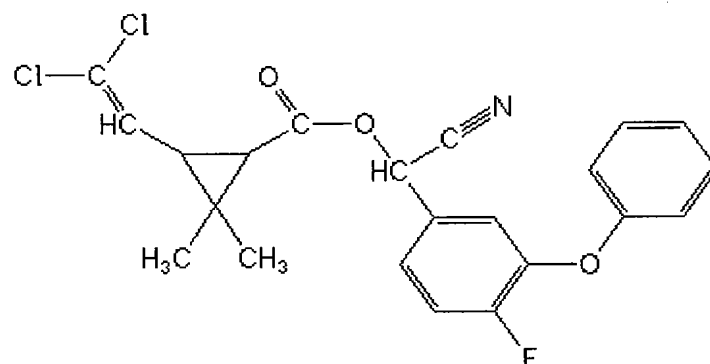
Reg. No.: 68359-37-5

Formula: C₂₂H₁₈Cl₂FNO₃

Activity: insecticides (pyrethroid ester insecticides)

Notes: One subset of isomers of this substance has its own ISO common name; see beta-cyfluthrin.

Structure:



Pronunciation: sī-floo-thrīn Guide to British pronunciation

InChIKey: QQODLKZGRKWIFG-UHFFFAOYSA-N

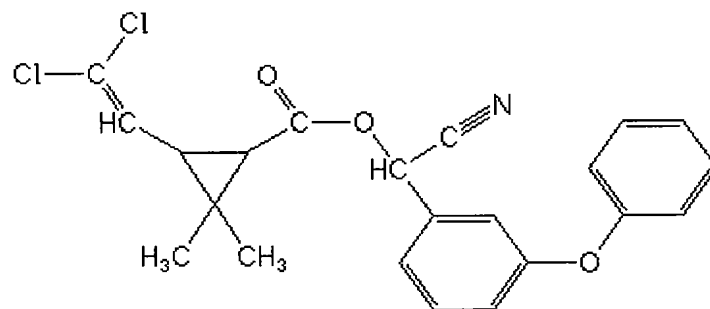
InChI: InChI=1S/C22H18Cl2FNO3/c1-22(2)15(11-19(23)24)20(22)21(27)29-18(12-26)13-8-9-16(25)17(10-13)28-14-6-4-3-5-7-14/h3-11,15,18,20H,1-2H3

A data sheet from the Compendium of Pesticide Common Names

cypermethrin

Chinese: 氯氰菊酯; **French:** cyperméthrine (n.f.); **Russian:** циперметрин

- Status:** ISO 1750 (published)
- IUPAC:** (*RS*)- α -cyano-3-phenoxybenzyl (1*RS*,3*RS*;1*RS*,3*SR*)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
or
(*RS*)- α -cyano-3-phenoxybenzyl (1*RS*)-*cis-trans*-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
- CAS:** cyano(3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
- Reg. No.:** 52315-07-8
- Formula:** C₂₂H₁₉Cl₂NO₃
- Activity:** acaricides (pyrethroid ester acaricides)
insecticides (pyrethroid ester insecticides)
- Notes:** Some subsets of isomers of this substance have their own ISO common names; see alpha-cypermethrin, beta-cypermethrin, theta-cypermethrin and zeta-cypermethrin.
- Structure:**



Pronunciation: sī-per-mēth-rīn Guide to British pronunciation

InChIKey: KAATUXNTWXVJKI-UHFFFAOYSA-N

InChI: InChI=1S/C22H19Cl2NO3/c1-22(2)17(12-19(23)24)20(22)21(26)28-18(13-25)14-7-6-10-16(11-14)27-15-8-4-3-5-9-15/h3-12,17-18,20H,1-2H3

A data sheet from the Compendium of Pesticide Common Names

deltamethrin

Chinese: 溴氰菊酯; **French:** deltaméthrine (n.f.); **Russian:** дельтаметрин

Status: ISO 1750 (published)

IUPAC: (*S*)- α -cyano-3-phenoxybenzyl (1*R*,3*R*)-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate
or

(*S*)- α -cyano-3-phenoxybenzyl (1*R*)-*cis*-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate

CAS: (*S*)-cyano(3-phenoxyphenyl)methyl (1*R*,3*R*)-3-(2,2-dibromoethenyl)-2,2-dimethylcyclopropanecarboxylate

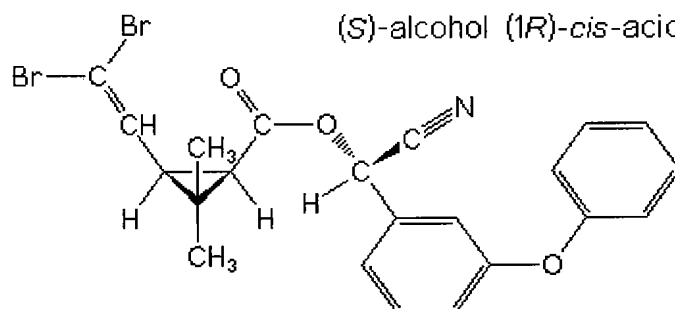
Reg. No.: 52918-63-5

Formula: C₂₂H₁₉Br₂NO₃

Activity: insecticides (pyrethroid ester insecticides)

Notes: The name "decamethrin" was originally proposed for this compound and was used in the literature, but was rejected because of a conflict with a trade mark.

Structure: (S)-alcohol (1*R*)-*cis*-acid



Pronunciation: dĕl-ta-mĕth-rĭn Guide to British pronunciation

InChIKey: OWZREIFADZCYQD-NSHGMRRFSA-N

InChI: InChI=1S/C22H19Br2NO3/c1-22(2)17(12-19(23)24)20(22)21(26)28-18(13-25)14-7-6-10-16(11-14)27-15-8-4-3-5-9-15/h3-12,17-18,20H,1-2H3/t17-,18+,20-/m0/s1

A data sheet from the Compendium of Pesticide Common Names

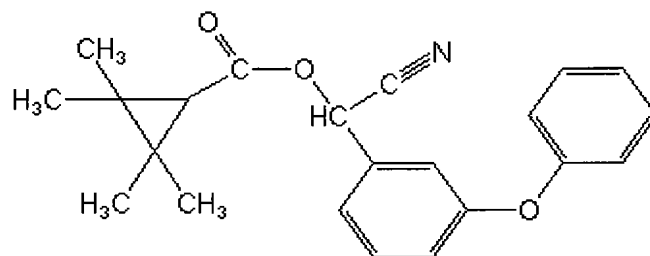
fenpropathrin

Chinese: 甲氰菊酯; **French:** fenproathrine (n.f.); **Russian:** фенпропатрин

Status: ISO 1750 (published)
IUPAC: (*RS*)- α -cyano-3-phenoxybenzyl 2,2,3,3-tetramethylcyclopropanecarboxylate
CAS: cyano(3-phenoxyphenyl)methyl 2,2,3,3-tetramethylcyclopropanecarboxylate
Reg. No.: 39515-41-8
Formula: C₂₂H₂₃NO₃
Activity: acaricides (pyrethroid ester acaricides)
insecticides (pyrethroid ester insecticides)

Notes:

Structure:



Pronunciation: fĕn-prō-pa-thrĭn Guide to British pronunciation

InChIKey: XQUXKZZNEFRC AW-UHFFFAOYSA-N

InChI: InChI=1S/C22H23NO3/c1-21(2)19(22(21,3)4)20(24)26-18(14-23)15-9-8-12-17(13-15)25-16-10-6-5-7-11-16/h5-13,18-19H,1-4H3

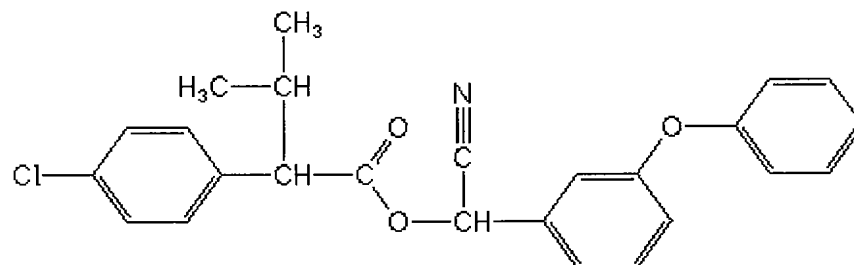
A data sheet from the Compendium of Pesticide Common Names

fenvalerate

Chinese: 氰戊菊酯; **French:** fenvalérate (n.m.); **Russian:** фенвалерат

Status: ISO 1750 (published)
IUPAC: (α *RS*)- α -cyano-3-phenoxybenzyl (2*RS*)-2-(4-chlorophenyl)-3-methylbutyrate
CAS: cyano(3-phenoxyphenyl)methyl 4-chloro- α -(1-methylethyl)benzeneacetate
Reg. No.: 51630-58-1
Formula: C₂₅H₂₂ClNO₃
Activity: acaricides (pyrethroid ester acaricides)
insecticides (pyrethroid ester insecticides)
Notes: One subset of isomers of this substance has its own ISO common name; see esfenvalerate.

Structure:



Pronunciation: fĕn-văĭ-er-ăt Guide to British pronunciation

InChIKey: NYPJDWWKZLNNGGM-UHFFFAOYSA-N

InChI: InChI=1S/C25H22ClNO3/c1-17(2)24(18-11-13-20(26)14-12-18)25(28)30-23(16-27)19-7-6-10-22(15-19)29-21-8-4-3-5-9-21/h3-15,17,23-24H,1-2H3

A data sheet from the Compendium of Pesticide Common Names

permethrin

Chinese: 氯菊酯; **French:** perméthrine (n.f.); **Russian:** перметрин

Status: ISO 1750 (published)

IUPAC: 3-phenoxybenzyl (1*RS*,3*RS*;1*RS*,3*SR*)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
or

3-phenoxybenzyl (1*RS*)-*cis-trans*-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

CAS: (3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate

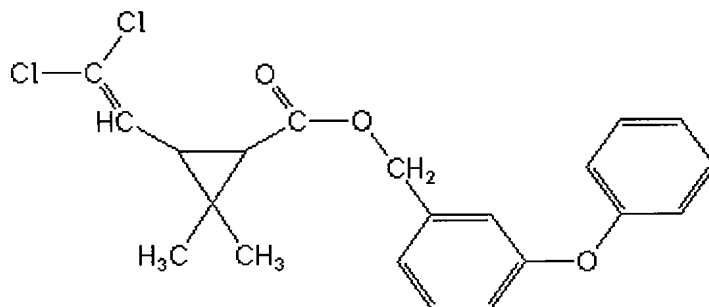
Reg. No.: 52645-53-1

Formula: C₂₁H₂₀Cl₂O₃

Activity: acaricides (pyrethroid ester acaricides)
insecticides (pyrethroid ester insecticides)

Notes: Some subsets of isomers of this substance have their own ISO common names; see biopermethrin and transpermethrin.

Structure:



Pronunciation: per-mēth-rin Guide to British pronunciation

InChIKey: RLLPVAHGXCWKJ-UHFFFAOYSA-N

InChI: InChI=1S/C₂₁H₂₀Cl₂O₃/c1-21(2)17(12-18(22)23)19(21)20(24)25-13-14-7-6-10-16(11-14)26-15-8-4-3-5-9-15/h3-12,17,19H,13H2,1-2H3

A data sheet from the Compendium of Pesticide Common Names

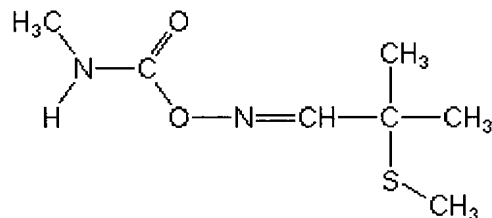
aldicarb

Chinese: 涕灭威; **French:** aldicarbe (n.m.); **Russian:** альдикарб

Status: ISO 1750 (published)
IUPAC: (*EZ*)-2-methyl-2-(methylthio)propionaldehyde *O*-methylcarbamoyloxime
CAS: 2-methyl-2-(methylthio)propanal *O*-[(methylamino)carbonyl]oxime
Reg. No.: 116-06-3
Formula: C₇H₁₄N₂O₂S
Activity: acaricides (oxime carbamate acaricides)
insecticides (oxime carbamate insecticides)
nematicides (oxime carbamate nematicides)

Notes:

Structure:



Pronunciation: ăl-dī-karb Guide to British pronunciation

InChIKey: QGLZXHRNAYXIBU-UHFFFAOYSA-N

InChI: InChI=1S/C7H14N2O2S/c1-7(2,12-4)5-9-11-6(10)8-3/h5H,1-4H3,(H,8,10)

A data sheet from the Compendium of Pesticide Common Names

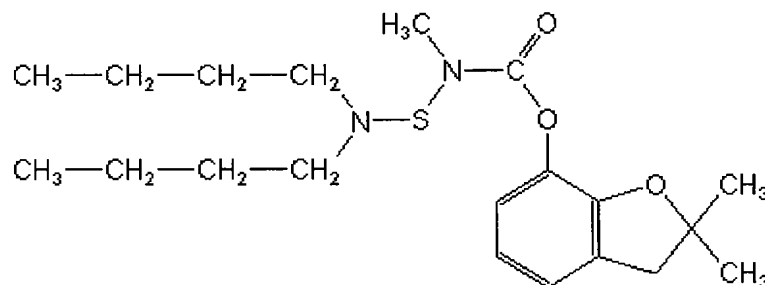
carbosulfan

Chinese: 丁硫克百威; **French:** carbosulfan (n.m.); **Russian:** карбосульфан

Status: ISO 1750 (published)
IUPAC: 2,3-dihydro-2,2-dimethylbenzofuran-7-yl (dibutylaminothio)methylcarbamate
CAS: 2,3-dihydro-2,2-dimethyl-7-benzofuranyl [(dibutylamino)thio]methylcarbamate
Reg. No.: 55285-14-8
Formula: $C_{20}H_{32}N_2O_3S$
Activity: insecticides (benzofuranyl methylcarbamate insecticides)
nematicides (carbamate nematicides)

Notes:

Structure:



Pronunciation: kar-bō-sŭl-făn Guide to British pronunciation

InChIKey: JLQUFIHWVLZVTJ-UHFFFAOYSA-N

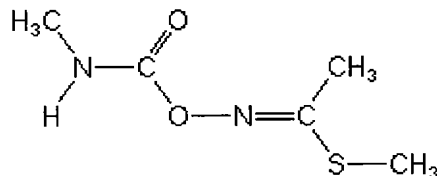
InChI: InChI=1S/C20H32N2O3S/c1-6-8-13-22(14-9-7-2)26-21(5)19(23)24-17-12-10-11-16-15-20(3,4)25-18(16)17/h10-12H,6-9,13-15H2,1-5H3

A data sheet from the Compendium of Pesticide Common Names

methomyl

Chinese: 灭多威; **French:** méthomyl (n.m.); **Russian:** метомил

Status: ISO 1750 (published)
IUPAC: *S*-methyl (*EZ*)-*N*-(methylcarbamoyloxy)thioacetimidate
CAS: methyl *N*-[[[(methylamino)carbonyl]oxy]ethanimidothioate
Reg. No.: 16752-77-5
Formula: C₅H₁₀N₂O₂S
Activity: insecticides (oxime carbamate insecticides)
Notes:
Structure:



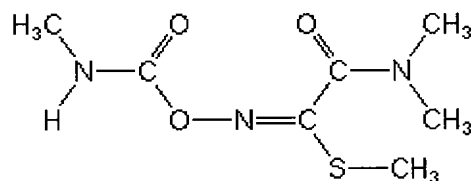
Pronunciation: *mětħ-ō-mīl* Guide to British pronunciation
InChIKey: UHXUZOCRWCRNSJ-UHFFFAOYSA-N
InChI: InChI=1S/C5H10N2O2S/c1-4(10-3)7-9-5(8)6-2/h1-3H3,(H,6,8)

A data sheet from the Compendium of Pesticide Common Names

oxamyl

Chinese: 杀线威; **French:** oxamyl; **Russian:** оксамил

Status: ISO 1750 (published)
IUPAC: (EZ)-N,N-dimethyl-2-methylcarbamoyloxyimino-2-(methylthio)acetamide
CAS: methyl 2-(dimethylamino)-N-[[[(methylamino)carbonyl]oxy]-2-oxoethanimidothioate
Reg. No.: 23135-22-0
Formula: C₇H₁₃N₃O₃S
Activity: acaricides (oxime carbamate acaricides)
insecticides (oxime carbamate insecticides)
nematicides (oxime carbamate nematicides)
Notes: The name “thioxamyl” has been used in the literature, but it has no official status.
Structure:



Pronunciation: ɒks-a-mīl Guide to British pronunciation
InChIKey: KZAUOCCYDRDERY-UHFFFAOYSA-N
InChI: InChI=1S/C7H13N3O3S/c1-8-7(12)13-9-5(14-4)6(11)10(2)3/h1-4H3,(H,8,12)

A data sheet from the Compendium of Pesticide Common Names

pirimicarb

Chinese: 抗蚜威; **French:** pirimicarbe* (n.m.); **Russian:** пиримикарб

Status: ISO 1750 (published)

IUPAC: 2-dimethylamino-5,6-dimethylpyrimidin-4-yl dimethylcarbamate

CAS: 2-(dimethylamino)-5,6-dimethyl-4-pyrimidinyl *N,N*-dimethylcarbamate

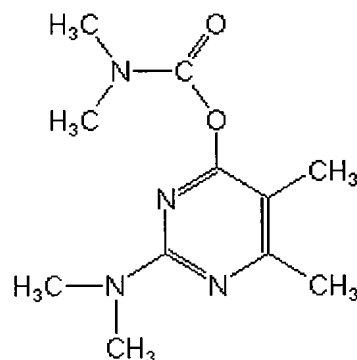
Reg. No.: 23103-98-2

Formula: C₁₁H₁₈N₄O₂

Activity: insecticides (dimethylcarbamate insecticides)

Notes: * According to ISO 1750, the name “pyrimicarbe” (n.m.) is used in France, but the ISO common name “pirimicarbe” (n.m.) also appears to be used.

Structure:



Pronunciation: pī-rīm-ī-karb Guide to British pronunciation

InChIKey: YFGYUFNIOHWBOB-UHFFFAOYSA-N

InChI: InChI=1S/C11H18N4O2/c1-7-8(2)12-10(14(3)4)13-9(7)17-11(16)15(5)6/h1-6H3

A data sheet from the Compendium of Pesticide Common Names

bendiocarb

Chinese: 噁虫威; **French:** bendiocarbe (n.m.); **Russian:** бендиокарб

Status: ISO 1750 (published)

IUPAC: 2,2-dimethyl-1,3-benzodioxol-4-yl methylcarbamate

CAS: 2,2-dimethyl-1,3-benzodioxol-4-yl *N*-methylcarbamate

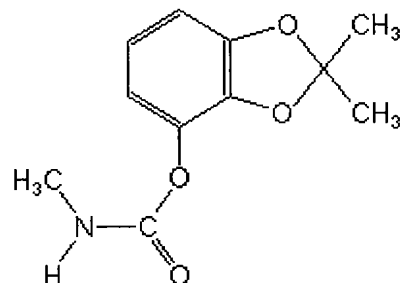
Reg. No.: 22781-23-3

Formula: C₁₁H₁₃NO₄

Activity: insecticides (carbamate insecticides)

Notes: The orthodox Chinese form “噁虫威” is used in GB 4839-2009 *Chinese common names for pesticides*, but the vulgar form “恶虫威” is also used in the literature.

Structure:



Pronunciation: bĕn-dī-ō-karb Guide to British pronunciation

InChIKey: XEGGRYVFLWGFHI-UHFFFAOYSA-N

InChI: InChI=1S/C11H13NO4/c1-11(2)15-8-6-4-5-7(9(8)16-11)14-10(13)12-3/h4-6H,1-3H3,(H,12,13)

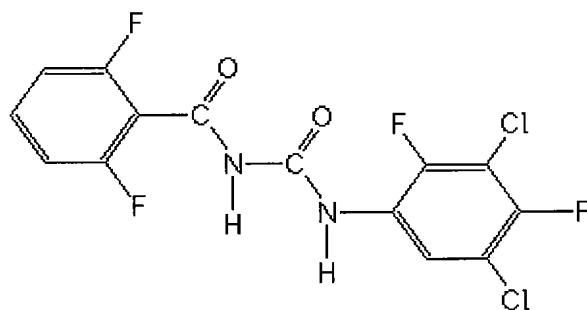
A data sheet from the Compendium of Pesticide Common Names

teflubenzuron

Chinese: 氟苯脲; **French:** téflubenzuron (n.m.); **Russian:** тefлyбензурон

Status: ISO 1750 (published)
IUPAC: 1-(3,5-dichloro-2,4-difluorophenyl)-3-(2,6-difluorobenzoyl)urea
CAS: *N*-[[[3,5-dichloro-2,4-difluorophenyl]amino]carbonyl]-2,6-difluorobenzamide
Reg. No.: 83121-18-0
Formula: C₁₄H₆Cl₂F₄N₂O₂
Activity: insecticides (benzoylphenylurea chitin synthesis inhibitors)
Notes: The Chinese name “伏虫隆” has also been used in the literature, but it has no official status.

Structure:



Pronunciation: tĕ-floo-bĕnz-ŭr-ŏn Guide to British pronunciation

InChIKey: CJDWRQLODFKPEL-UHFFFAOYSA-N

InChI: InChI=1S/C14H6Cl2F4N2O2/c15-5-4-8(12(20)10(16)11(5)19)21-14(24)22-13(23)9-6(17)2-1-3-7(9)18/h1-4H,(H2,21,22,23,24)

A data sheet from the Compendium of Pesticide Common Names

dicofol

Chinese: 三氯杀螨醇; **French:** dicofol (n.m.); **Russian:** дикофол

Status: ISO 1750 (published)

IUPAC: 2,2,2-trichloro-1,1-bis(4-chlorophenyl)ethanol
or
 $\alpha,\alpha,\alpha,4,4'$ -pentachloro- α -methylbenzhydryl alcohol

CAS: 4-chloro- α -(4-chlorophenyl)- α -(trichloromethyl)benzenemethanol

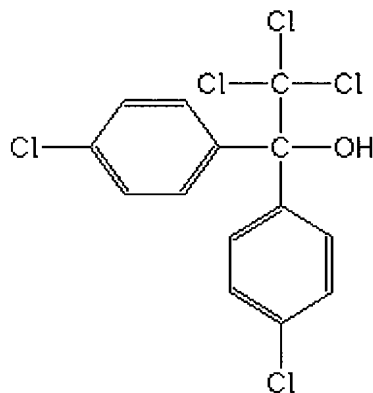
Reg. No.: 115-32-2

Formula: $C_{14}H_9Cl_5O$

Activity: acaricides (bridged diphenyl acaricides)

Notes:

Structure:



Pronunciation: *dī-kō-fōl* Guide to British pronunciation

InChIKey: UOAMTSKGCBMZTC-UHFFFAOYSA-N

InChI: InChI=1S/C14H9Cl5O/c15-11-5-1-9(2-6-11)13(20,14(17,18)19)10-3-7-12(16)8-4-10/h1-8,20H

A data sheet from the Compendium of Pesticide Common Names

endosulfan

Chinese: 硫丹; **French:** endosulfan; **Russian:** эндосульфан

Status: ISO 1750 (published)

IUPAC: 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3-ylenebismethylene sulfite
or

6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepine 3-oxide

CAS: 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin 3-oxide

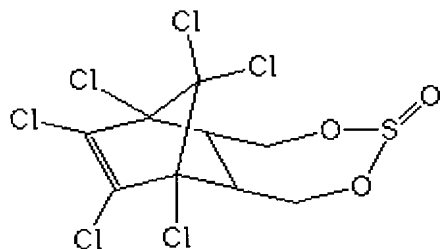
Reg. No.: 115-29-7

Formula: C₉H₆Cl₆O₃S

Activity: acaricides (organochlorine acaricides)
insecticides (cyclodiene insecticides)

Notes: Commercial endosulfan consists of 2 components, alpha-endosulfan (which is an ISO common name) and beta-endosulfan.
The name "thiodan" is used in Iran and was used in the former USSR (тиодан), but Thiodan is a registered trade mark in many countries. The name "benzoepin" is approved by the Japanese Ministry of Agriculture, Forestry and Fisheries.

Structure:



Pronunciation: ěn-dō-sŭl-făn Guide to British pronunciation

InChIKey: RDYMFSUJUZWHLH-UHFFFAOYSA-N

InChI: InChI=1S/C9H6Cl6O3S/c10-5-6(11)8(13)4-2-18-19(16)17-1-3(4)7(5,12)9(8,14)15/h3-4H,1-2H2

A data sheet from the Compendium of Pesticide Common Names

lindane

Chinese: 林丹; **French:** lindane (n.m.); **Russian:** линдан

Status: ISO 1750 (published)

IUPAC: 1 α ,2 α ,3 β ,4 α ,5 α ,6 β -hexachlorocyclohexane

CAS: (1 α ,2 α ,3 β ,4 α ,5 α ,6 β)-1,2,3,4,5,6-hexachlorocyclohexane

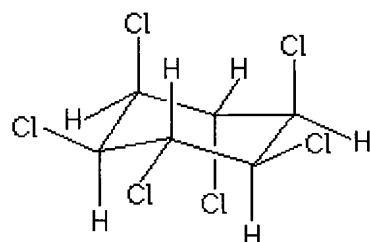
Reg. No.: 58-89-9

Formula: C₆H₆Cl₆

Activity: acaricides (organochlorine acaricides)
insecticides (organochlorine insecticides)
rodenticides (organochlorine rodenticides)

Notes: lindane is the ISO common name for grades of gamma-HCH containing not less than 99% of the pure compound.
The name “林丹” is approved in China for gamma-HCH and for lindane.

Structure:



Pronunciation: *lĭn-dān* Guide to British pronunciation

InChIKey: JLYXXMFPNIAWKQ-GNIYUCBRSA-N

InChI: InChI=1S/C6H6Cl6/c7-1-2(8)4(10)6(12)5(11)3(1)9/h1-6H/t1-,2-,3-,4+,5+,6+

A data sheet from the Compendium of Pesticide Common Names

benzoximate

Chinese: 苯螨特; **French:** benzoximate (n.m.); **Russian:** бензоксимат

Status: ISO 1750 (published)

IUPAC: 3-chloro- α -(*EZ*)-ethoxyimino-2,6-dimethoxybenzyl benzoate
or

ethyl *O*-benzoyl-3-chloro-2,6-dimethoxybenzohydroximate

CAS: benzoic acid anhydride with 3-chloro-*N*-ethoxy-2,6-dimethoxybenzenecarboximidic acid

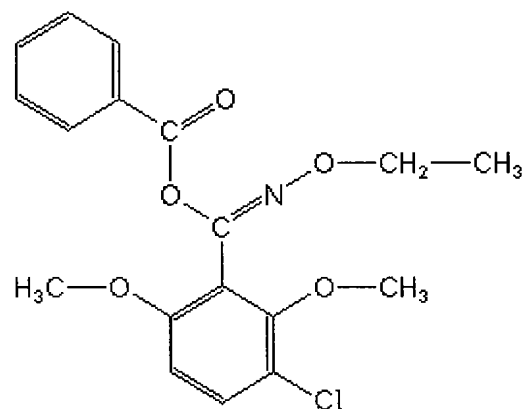
Reg. No.: 29104-30-1

Formula: C₁₈H₁₈ClNO₅

Activity: acaricides (bridged diphenyl acaricides)

Notes: The name “benzomate” is approved by the Japanese Ministry of Agriculture, Forestry and Fisheries.

Structure:



Pronunciation: bĕnz-ŏks-ĭ-māt Guide to British pronunciation

InChIKey: BZMIHNKNQJJVRO-UHFFFAOYSA-N

InChI: InChI=1S/C18H18ClNO5/c1-4-24-20-17(25-18(21)12-8-6-5-7-9-12)15-14(22-2)11-10-13(19)16(15)23-3/h5-11H,4H2,1-3H3

A data sheet from the Compendium of Pesticide Common Names

cartap

Chinese: 杀螟丹; **French:** cartap (n.m.); **Russian:** картап

Status: ISO 1750 (published)

IUPAC: *S,S'* -(2-dimethylaminotrimethylene) bis(thiocarbamate)

CAS: *S,S'* -[2-(dimethylamino)-1,3-propanediyl] dicarbamothioate

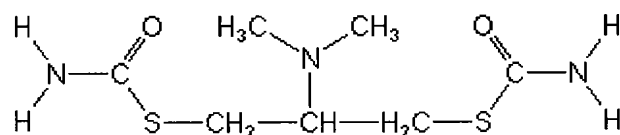
Reg. No.: 15263-53-3

Formula: C₇H₁₅N₃O₂S₂

Activity: insecticides (nereistoxin analogue insecticides)

Notes: When this substance is used as a salt, its identity should be stated, for example cartap hydrochloride [15263-52-2].

Structure:



Pronunciation: *kar-tăp* Guide to British pronunciation

InChIKey: IRUJZVNXZWPBMU-UHFFFAOYSA-N

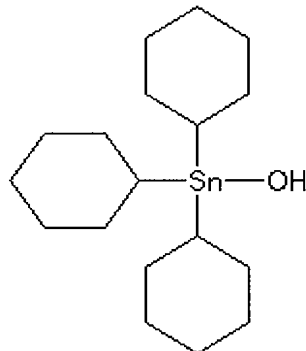
InChI: InChI=1S/C7H15N3O2S2/c1-10(2)5(3-13-6(8)11)4-14-7(9)12/h5H,3-4H2,1-2H3,(H2,8,11)(H2,9,12)

A data sheet from the Compendium of Pesticide Common Names

cyhexatin

Chinese: 三环锡; **French:** cyh  xatin (n.m.); **Russian:** цихексатин

Status: ISO 1750 (published)
IUPAC: tricyclohexyltin hydroxide
CAS: tricyclohexylhydroxystannane
Reg. No.: 13121-70-5
Formula: C₁₈H₃₄OSn
Activity: acaricides (organotin acaricides)
Notes: The name "tricyclohexyltin hydroxide" is used in Japan.
Structure:



Pronunciation: s  -h  ks-a-t  n Guide to British pronunciation

InChIKey: WCMMILVIRZAPLE-UHFFFAOYSA-M

InChI: InChI=1S/3C6H11.H2O.Sn/c3*1-2-4-6-5-3-1;;/h3*1H,2-6H2;1H2;/q;;;+1/p-1

A data sheet from the Compendium of Pesticide Common Names

tetradifon

Chinese: 三氯杀螨砒; **French:** tétradifon (n.m.); **Russian:** тетрадифон

Status: ISO 1750 (published)

IUPAC: 4-chlorophenyl 2,4,5-trichlorophenyl sulfone

CAS: 1,2,4-trichloro-5-[(4-chlorophenyl)sulfonyl]benzene

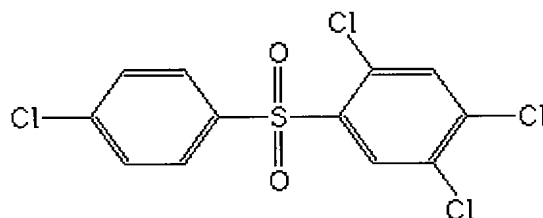
Reg. No.: 116-29-0

Formula: C₁₂H₆Cl₄O₂S

Activity: acaricides (bridged diphenyl acaricides)

Notes: The name “tedion” was formerly used in Turkey and was used in the former USSR (тедион), but Tedion is a registered trade mark in many countries.

Structure:



Pronunciation: tĕ-tra-dī-fŏn Guide to British pronunciation

InChIKey: MLGCXEBRWGEOQX-UHFFFAOYSA-N

InChI: InChI=1S/C12H6Cl4O2S/c13-7-1-3-8(4-2-7)19(17,18)12-6-10(15)9(14)5-11(12)16/h1-6H

A data sheet from the Compendium of Pesticide Common Names

abamectin (avermectins)

Chinese: 阿维菌素; **French:** abamectine (n.f.); **Russian:** абамектин

Status: ISO 1750 (published)

IUPAC: extended von Baeyer nomenclature: mixture of $\geq 80\%$ (10*E*,14*E*,16*E*)-(1*R*,4*S*,5'*S*,6*S*,6'*R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-6'-[(*S*)-*sec*-butyl]-21,24-dihydroxy-5',11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-tetraene)-6-spiro-2'-(5',6'-dihydro-2'*H*-pyran)-12-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -*L*-arabino-hexopyranosyl)-3-*O*-methyl- α -*L*-arabino-hexopyranoside and $\leq 20\%$ (10*E*,14*E*,16*E*)-(1*R*,4*S*,5'*S*,6*S*,6'*R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-21,24-dihydroxy-6'-isopropyl-5',11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-tetraene)-6-spiro-2'-(5',6'-dihydro-2'*H*-pyran)-12-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -*L*-arabino-hexopyranosyl)-3-*O*-methyl- α -*L*-arabino-hexopyranoside
or
bridged fused ring systems nomenclature: mixture of $\geq 80\%$ (2*aE*,4*E*,8*E*)-(5'*S*,6*S*,6'*R*,7*S*,11*R*,13*S*,15*S*,17*aR*,20*R*,20*aR*,20*bS*)-6'-[(*S*)-*sec*-butyl]-5',6,6',7,10,11,14,15,17*a*,20,20*a*,20*b*-dodecahydro-20,20*b*-dihydroxy-5',6,8,19-tetramethyl-17-oxospiro[11,15-methano-2*H*,13*H*,17*H*-furo[4,3,2-*pq*][2,6]benzodioxacyclooctadecin-13,2'-[2*H*]pyran]-7-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -*L*-arabino-hexopyranosyl)-3-*O*-methyl- α -*L*-arabino-hexopyranoside and $\leq 20\%$ (2*aE*,4*E*,8*E*)-(5'*S*,6*S*,6'*R*,7*S*,11*R*,13*S*,15*S*,17*aR*,20*R*,20*aR*,20*bS*)-5',6,6',7,10,11,14,15,17*a*,20,20*a*,20*b*-dodecahydro-20,20*b*-dihydroxy-6'-isopropyl-5',6,8,19-tetramethyl-17-oxospiro[11,15-methano-2*H*,13*H*,17*H*-furo[4,3,2-*pq*][2,6]benzodioxacyclooctadecin-13,2'-[2*H*]pyran]-7-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -*L*-arabino-hexopyranosyl)-3-*O*-methyl- α -*L*-arabino-hexopyranoside

CAS: avermectin B₁

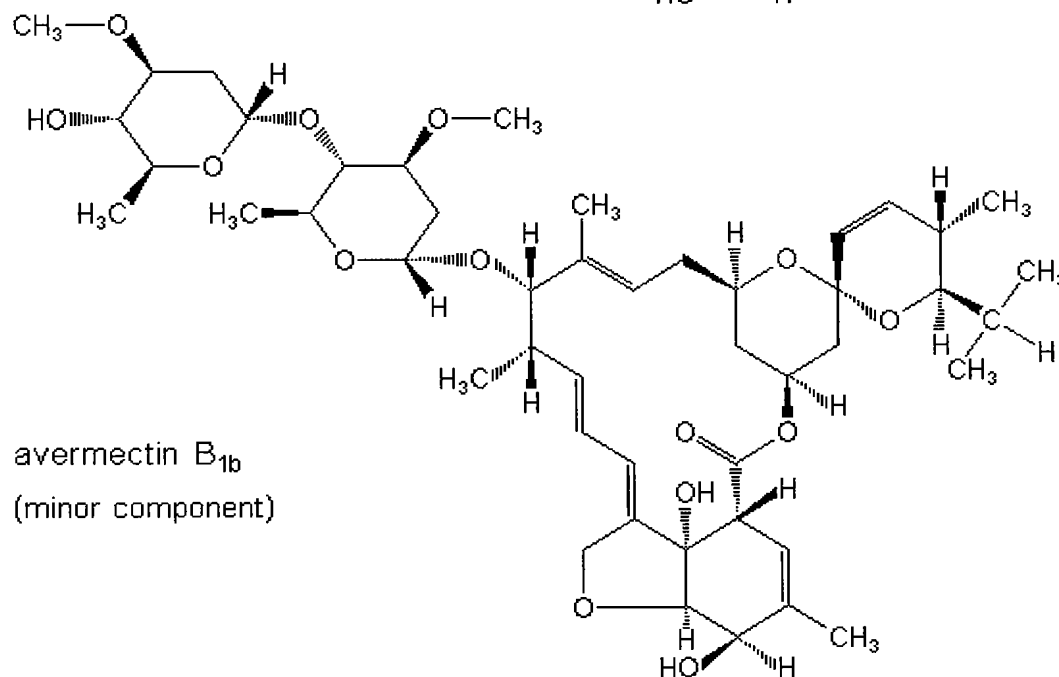
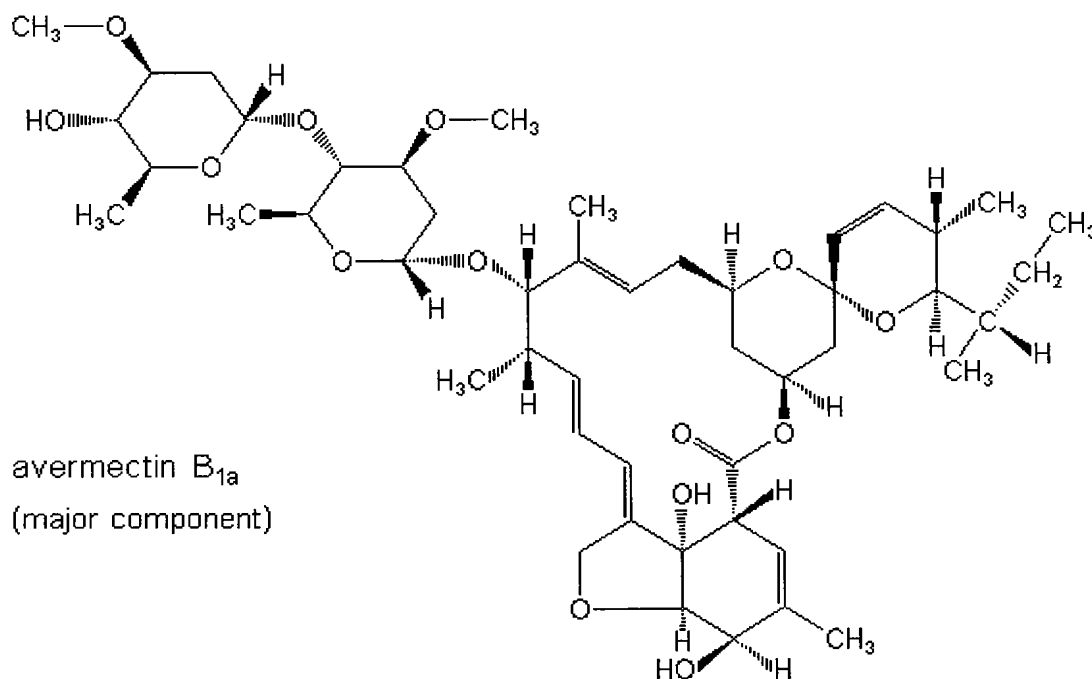
Reg. No.: 71751-41-2

Formula: C₄₈H₇₂O₁₄ (avermectin B_{1a}) + C₄₇H₇₀O₁₄ (avermectin B_{1b})

Activity: acaricides (avermectin acaricides)
insecticides (avermectin insecticides)
nematicides (avermectin nematicides)

Notes: The name "abamectin" was provisionally approved for an 80:20 mixture in 1985, but the definition was changed at the request of the sponsor during the final approval process in 2008.

Structure:



Pronunciation: äb-a-měk-tin

InChIKey: avermectin B_{1a} (6' -(S)-sec-butyl):
RRZXIRBKLT SOM-XP NPUAGNSA-N
avermectin B_{1b} (6' -isopropyl):
ZFUKERYTFURFGA-PV VXT EPVSA-N
identifier for mixture (not valid):
IBSREHMXUMOFBB-JFUDTMANSA-N

InChI: avermectin B_{1a} (6' -(S)-sec-butyl):
InChI=1S/C48H72O14/c1-11-25(2)43-28(5)17-18-47(62-43)23-34-20-33(61-47)
16-15-27(4)42(26(3)13-12-14-32-24-55-45-40(49)29(6)19-35(46(51)58-34)48
(32,45)52)59-39-22-37(54-10)44(31(8)57-39)60-38-21-36(53-9)41(50)30(7)56-
38/h12-15,17-19,25-26,28,30-31,33-45,49-50,52H,11,16,20-24H2,1-10H3/b13-

12+,27-15+,32-14+/t25-,26-,28-,30-,31-,33+,34-,35-,36-,37-,38-,39-,40+,41-,42-,43+,44-,45+,47+,48+/m0/s1

avermectin B_{1b} (6'-isopropyl):

InChI=1S/C47H70O14/c1-24(2)41-27(5)16-17-46(61-41)22-33-19-32(60-46)15-14-26(4)42(25(3)12-11-13-31-23-54-44-39(48)28(6)18-34(45(50)57-33)47(31,44)51)58-38-21-36(53-10)43(30(8)56-38)59-37-20-35(52-9)40(49)29(7)55-37/h11-14,16-18,24-25,27,29-30,32-44,48-49,51H,15,19-23H2,1-10H3/b12-11+,26-14+,31-13+/t25-,27-,29-,30-,32+,33-,34-,35-,36-,37-,38-,39+,40-,41+,42-,43-,44+,46+,47+/m0/s1

A data sheet from the Compendium of Pesticide Common Names

ivermectin

Chinese: 伊维菌素; **French:** ivermectine (n.f.); **Russian:** ивермектин

Status: WHO INN

IUPAC: extended von Baeyer nomenclature: mixture of (10*E*,14*E*,16*E*)-(1*R*,4*S*,5' *S*,6*R*,6' *R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-6' -[(*S*)-*sec*-butyl]-21,24-dihydroxy-5' ,11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-tetraene)-6-spiro-2' -(tetrahydropyran)-12-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -L-*arabino*-hexopyranosyl)-3-*O*-methyl- α -L-*arabino*-hexopyranoside and (10*E*,14*E*,16*E*)-(1*R*,4*S*,5' *S*,6*R*,6' *R*,8*R*,12*S*,13*S*,20*R*,21*R*,24*S*)-21,24-dihydroxy-6' -isopropyl-5' ,11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-tetraene)-6-spiro-2' -(tetrahydropyran)-12-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -L-*arabino*-hexopyranosyl)-3-*O*-methyl- α -L-*arabino*-hexopyranoside
or
bridged fused ring systems nomenclature: mixture of (2*aE*,4*E*,8*E*)-(5' *S*,6*S*,6' *R*,7*S*,11*R*,13*R*,15*S*,17*aR*,20*R*,20*aR*,20*bS*)-6' -[(*S*)-*sec*-butyl]-3' ,4' ,5' ,6,6' ,7,10,11,14,15,17*a*,20,20*a*,20*b*-tetradecahydro-20,20*b*-dihydroxy-5' ,6,8,19-tetramethyl-17-oxospiro[11,15-methano-2*H*,13*H*,17*H*-furo[4,3,2-*pq*][2,6]benzodioxacyclooctadecin-13,2' -[2*H*]pyran]-7-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -L-*arabino*-hexopyranosyl)-3-*O*-methyl- α -L-*arabino*-hexopyranoside and (2*aE*,4*E*,8*E*)-(5' *S*,6*S*,6' *R*,7*S*,11*R*,13*R*,15*S*,17*aR*,20*R*,20*aR*,20*bS*)-3' ,4' ,5' ,6,6' ,7,10,11,14,15,17*a*,20,20*a*,20*b*-tetradecahydro-20,20*b*-dihydroxy-6' -isopropyl-5' ,6,8,19-tetramethyl-17-oxospiro[11,15-methano-2*H*,13*H*,17*H*-furo[4,3,2-*pq*][2,6]benzodioxacyclooctadecin-13,2' -[2*H*]pyran]-7-yl 2,6-dideoxy-4-*O*-(2,6-dideoxy-3-*O*-methyl- α -L-*arabino*-hexopyranosyl)-3-*O*-methyl- α -L-*arabino*-hexopyranoside

CAS: ivermectin

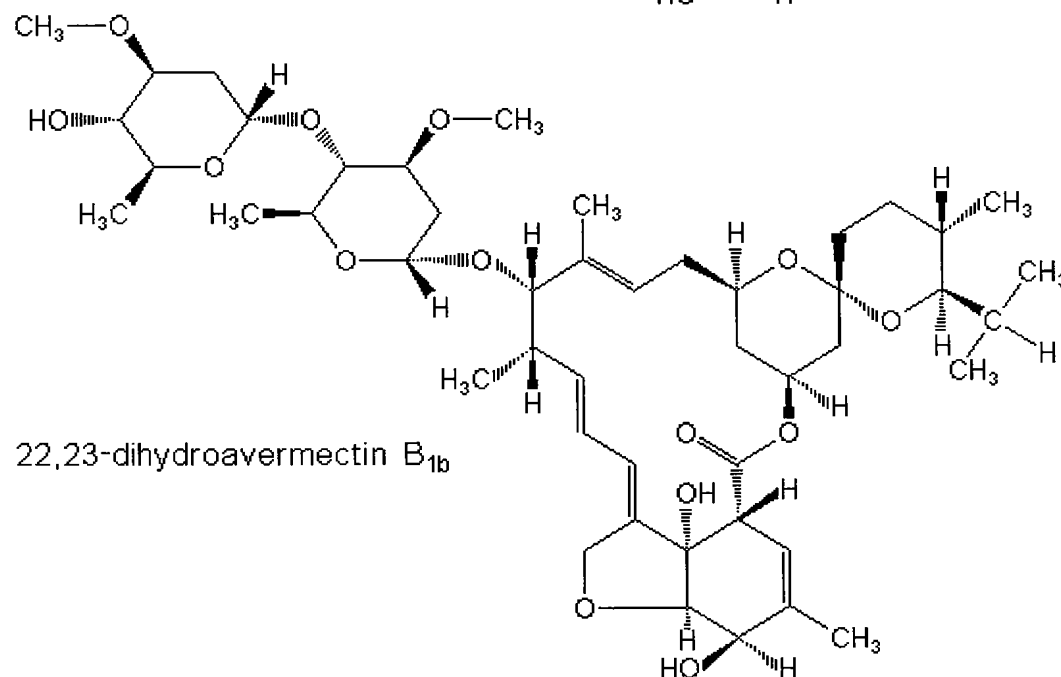
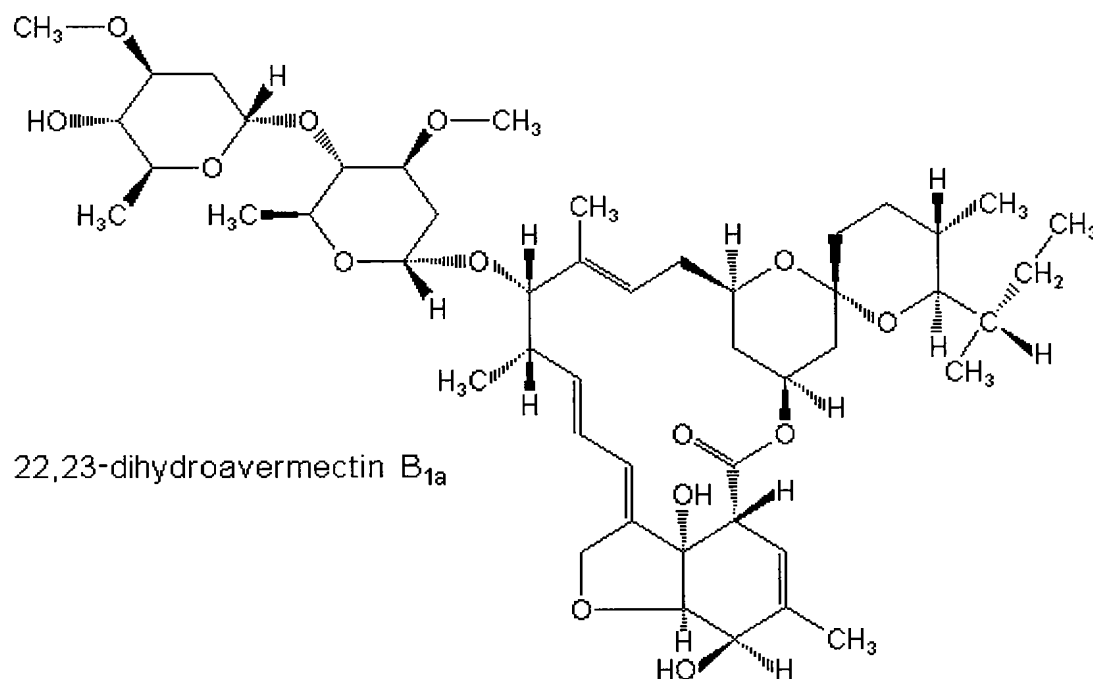
Reg. No.: 70288-86-7 (70161-11-4 + 70209-81-3)

Formula: C₄₈H₇₄O₁₄ (22,23-dihydroavermectin B_{1a}) + C₄₇H₇₂O₁₄ (22,23-dihydroavermectin B_{1b})

Activity: acaricides (avermectin acaricides)
insecticides (avermectin insecticides)

Notes: There is no ISO common name for this substance; the name "ivermectin" is approved by the World Health Organization.
The Chinese name “依维菌素” has also been used in the literature, but it has no official status.

Structure:



Pronunciation: i-ver-měk-tin Guide to British pronunciation

InChIKey: 22,23-dihydroavermectin B_{1a} (6' -(S)-sec-butyl):

AZSNMRSAGSSBNP-XPNUAGNSA-N

22,23-dihydroavermectin B_{1b} (6' -isopropyl):

VARHUCVRRNANBD-PV VXTEPVSA-N

identifier for mixture (not valid):

SPBDXSGPUHCETR-JFUDTMANSA-N

InChI: 22,23-dihydroavermectin B_{1a} (6' -(S)-sec-butyl):

InChI=1S/C48H74O14/c1-11-25(2)43-28(5)17-18-47(62-43)23-34-20-33(61-47)
16-15-27(4)42(26(3)13-12-14-32-24-55-45-40(49)29(6)19-35(46(51)58-34)48
(32,45)52)59-39-22-37(54-10)44(31(8)57-39)60-38-21-36(53-9)41(50)30(7)56-
38/h12-15,19,25-26,28,30-31,33-45,49-50,52H,11,16-18,20-24H2,1-10H3/b13-

12+,27-15+,32-14+/t25-,26-,28-,30-,31-,33+,34-,35-,36-,37-,38-,39-,40+,41-,42-,43+,44-,45+,47+,48+/m0/s1

22,23-dihydroavermectin B_{1b} (6' -isopropyl):

InChI=1S/C47H72O14/c1-24(2)41-27(5)16-17-46(61-41)22-33-19-32(60-46)15-14-26(4)42(25(3)12-11-13-31-23-54-44-39(48)28(6)18-34(45(50)57-33)47(31,44)51)58-38-21-36(53-10)43(30(8)56-38)59-37-20-35(52-9)40(49)29(7)55-37/h11-14,18,24-25,27,29-30,32-44,48-49,51H,15-17,19-23H2,1-10H3/b12-11+,26-14+,31-13+/t25-,27-,29-,30-,32+,33-,34-,35-,36-,37-,38-,39+,40-,41+,42-,43-,44+,46+,47+/m0/s1

A data sheet from the Compendium of Pesticide Common Names

milbemycin oxime

French: oxime de milbémycine; **Russian:** милбемицин оксим

Status: none

IUPAC: extended von Baeyer nomenclature: mixture of 70% (10*E*,14*E*,16*E*)-(1*R*,4*S*,5'*S*,6*R*,6' *R*,8*R*,13*R*,20*R*,24*S*)-6' -ethyl-24-hydroxy-5' ,11,13,22-tetramethyl-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-tetraene)-6-spiro-2' -(tetrahydropyran)-2,21-dione 21-(*EZ*)-oxime and 30% (10*E*,14*E*,16*E*)-(1*R*,4*S*,5' *S*,6*R*,6' *R*,8*R*,13*R*,20*R*,24*S*)-24-hydroxy-5' ,6' ,11,13,22-pentamethyl-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]pentacosa-10,14,16,22-tetraene)-6-spiro-2' -(tetrahydropyran)-2,21-dione 21-(*EZ*)-oxime
or
bridged fused ring systems nomenclature: mixture of 70% (2*aE*,4*E*,8*E*)-(5' *S*,6*R*,6' *R*,11*R*,13*R*,15*S*,17*aR*,20*aR*,20*bS*)-6' -ethyl-3' ,4' ,5' ,6' ,10,11,14,15,20*a*,20*b*-decahydro-20*b*-hydroxy-5' ,6,8,19-tetramethylspiro[11,15-methano-2*H*,13*H*,17*H*-furo[4,3,2-*pq*][2,6]benzodioxacyclooctadecin-13,2' -[2*H*]pyran]-17,20(6*H*,17*aH*)-dione 20-(*EZ*)-oxime and 30% (2*aE*,4*E*,8*E*)-(5' *S*,6*R*,6' *R*,11*R*,13*R*,15*S*,17*aR*,20*aR*,20*bS*)-3' ,4' ,5' ,6' ,10,11,14,15,20*a*,20*b*-decahydro-20*b*-hydroxy-5' ,6,6' ,8,19-pentamethylspiro[11,15-methano-2*H*,13*H*,17*H*-furo[4,3,2-*pq*][2,6]benzodioxacyclooctadecin-13,2' -[2*H*]pyran]-17,20(6*H*,17*aH*)-dione 20-(*EZ*)-oxime

CAS: (6*R*,25*R*)-5-demethoxy-28-deoxy-6,28-epoxy-25-ethyl-5-(hydroxyimino) milbemycin B mixture with (6*R*,25*R*)-5-demethoxy-28-deoxy-6,28-epoxy-5-(hydroxyimino)-25-methylmilbemycin B

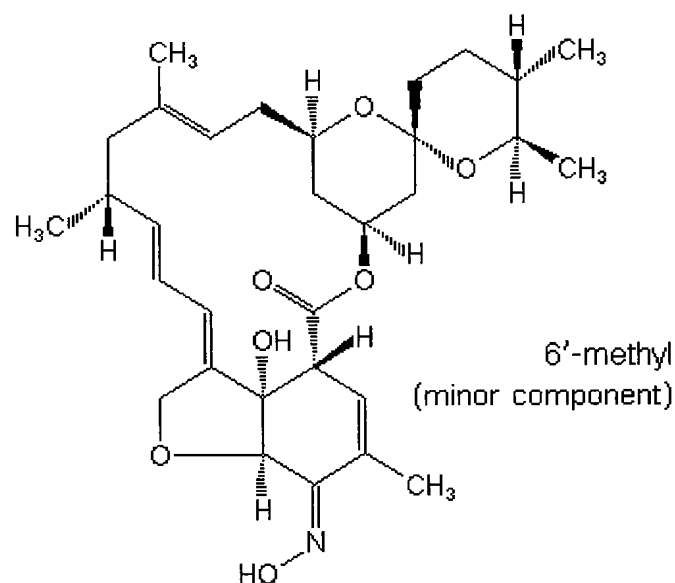
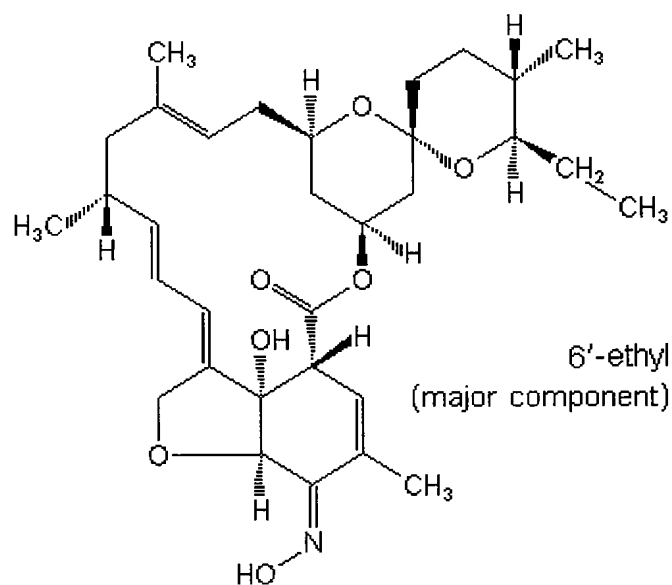
Reg. No.:

Formula: C₃₁H₄₃NO₇ + C₃₂H₄₅NO₇

Activity: acaricides (milbemycin acaricides)
insecticides (milbemycin insecticides)

Notes: There is no ISO common name for this substance; the name "milbemycin oxime" has been used in the literature but it has no official status.

Structure:



Pronunciation: mīl-bě-mī-sīn ōk-sēm Guide to British pronunciation

InChIKey: 6' -ethyl:
YCAZFHUABUMOIM-OWOPNLEVSA-N

6' -methyl:
VDBGWFGLMXRIK-FJZHFHHPSA-N
identifier for mixture (not valid):
CKVMAPHTVCTEMM-GSYGMDRSSA-N

InChI: 6' -ethyl:
InChI=1S/C32H45NO7/c1-6-27-21(4)12-13-31(40-27)17-25-16-24(39-31)11-10-20(3)14-19(2)8-7-9-23-18-37-29-28(33-36)22(5)15-26(30(34)38-25)32(23,29)35/h7-10,15,19,21,24-27,29,35-36H,6,11-14,16-18H2,1-5H3/b8-7+,20-10+,23-9+,33-28+/t19-,21-,24+,25-,26-,27+,29+,31+,32+/m0/s1
6' -methyl:
InChI=1S/C31H43NO7/c1-18-7-6-8-23-17-36-28-27(32-35)21(4)14-26(31(23,28)34)29(33)37-25-15-24(10-9-19(2)13-18)39-30(16-25)12-11-20(3)22(5)38-30/h6-9,14,18,20,22,24-26,28,34-35H,10-13,15-17H2,1-5H3/b7-6+,19-9+,23-8+,32-27+/t18-,20-,22+,24+,25-,26-,28+,30-,31+/m0/s1

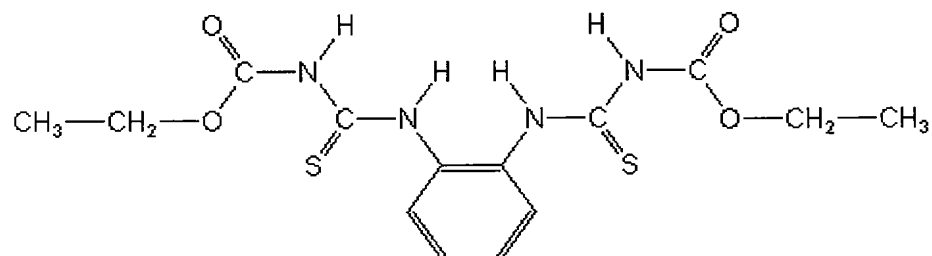
A data sheet from the Compendium of Pesticide Common Names

thiophanate

Chinese: 硫菌灵; **French:** thiophanate* (n.m.); **Russian:** тиофанат

Status: ISO 1750 (published)
IUPAC: diethyl 4,4' -(*o*-phenylene)bis(3-thioallophanate)
CAS: diethyl [1,2-phenylenebis(iminocarbonothioyl)]bis[carbamate]
Reg. No.: 23564-06-9
Formula: C₁₄H₁₈N₄O₄S₂
Activity: fungicides (benzimidazole precursor fungicides; carbamate fungicides)
Notes: * The name "thiophanate-éthyl" (n.m.) is used in France.
The analogous dimethyl ester has the ISO common name thiophanate-methyl.

Structure:



Pronunciation: thī-ōf-an-āt Guide to British pronunciation

InChIKey: YFNCATAIYKQPOO-UHFFFAOYSA-N

InChI: InChI=1S/C14H18N4O4S2/c1-3-21-13(19)17-11(23)15-9-7-5-6-8-10(9)16-12(24)18-14(20)22-4-2/h5-8H,3-4H2,1-2H3,(H2,15,17,19,23)(H2,16,18,20,24)

A data sheet from the Compendium of Pesticide Common Names

trichlorfon

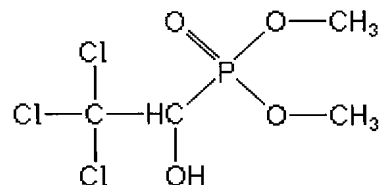
Chinese: 敌百虫; **French:** trichlorfon (n.m.); **Russian:** трихлорфон*

Status: ISO 1750 (published)
IUPAC: dimethyl (*RS*)-2,2,2-trichloro-1-hydroxyethylphosphonate
 or
 (*RS*)-2,2,2-trichloro-1-(dimethoxyphosphinoyl)ethanol
CAS: dimethyl (*P*)-(2,2,2-trichloro-1-hydroxyethyl)phosphonate
Reg. No.: 52-68-6
Formula: C₄H₈Cl₃O₄P

Activity: acaricides (phosphonate acaricides)
 insecticides (phosphonate insecticides)

Notes: The name “metrifonate” is approved by the World Health Organization; the Chinese version is “美曲磷酯” and the Russian version is “метрифонат”.
 * The name “chlorophos” (хлорофос) was used in the former USSR.
 The name “DEP” is approved by the Japanese Ministry of Agriculture, Forestry and Fisheries. The name “dipterex” was formerly used in Turkey, but Dipterex is a registered trade mark in many countries. The name “metriphosphate” was formerly approved by the British Pharmacopœia Commission. The name “trichlorphon” was formerly approved by the British Standards Institution.
 The butyrate ester has its own ISO common name, butonate.

Structure:



Pronunciation: trī-klor-fŏn Guide to British pronunciation

InChIKey: NFACJZMKEDPNKN-UHFFFAOYSA-N

InChI: InChI=1S/C4H8Cl3O4P/c1-10-12(9,11-2)3(8)4(5,6)7/h3,8H,1-2H3

A data sheet from the Compendium of Pesticide Common Names

dichlorvos

Chinese: 敌敌畏; **French:** dichlorvos (n.m.); **Russian:** дихлорвос

Status: ISO 1750 (published)

IUPAC: 2,2-dichlorovinyl dimethyl phosphate

CAS: 2,2-dichloroethenyl dimethyl phosphate

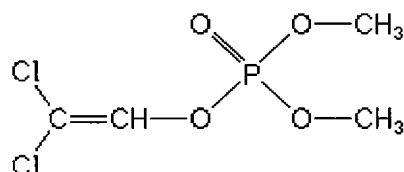
Reg. No.: 62-73-7

Formula: $C_4H_7Cl_2O_4P$

Activity: acaricides (organophosphate acaricides)
insecticides (organophosphate insecticides)

Notes: The name "DDVP" (ДДВФ) was used in the former USSR.
Mis-spelled versions of "dichlorvos" are common in the literature, including dichlorfos, dichlorofos, dichlorophos, dichlorovos and dichlorphos.
This substance is a component of another pesticide, calvinphos.

Structure:



Pronunciation: dī-klor-vōs Guide to British pronunciation

InChIKey: OEBRKCOUFCWJD-UHFFFAOYSA-N

InChI: InChI=1S/C4H7Cl2O4P/c1-8-11(7,9-2)10-3-4(5)6/h3H,1-2H3

A data sheet from the Compendium of Pesticide Common Names

EXHIBIT B

In the United States Patent and Trademark Office

IN RE APPLICATION OF: Begliomini et al.

US Serial No. 10/583003

Filed: 15. Dec 2004 as PCT International Application (PCT/EP2004/014277)

FOR: Fungicidal mixtures based on carbamate derivatives and insecticides

DECLARATION

I, Jürgen Langewald, Dr. rer. agr., a citizen of Germany and residing at 68165 Mannheim, Joseph-Hayen-Straße 3 - 5, declare as follows:

I am a fully trained Biologist, having studied Biology at Friedrich Alexander University, Schloßplatz 4, 91054 Erlangen, Germany, from 1982 to 1985, and at Georg Augustus University, Wilhelmsplatz 1, 37073 Göttingen, Germany, from 1985 to 1988.

I was awarded my doctor's degree from the Justus Liebig University in Luwigsstraße 23, 35390 Gießen, Germany in 1994.

I worked for the International Institute of Tropical Agriculture, Cotonou, Benin, from 1993 to 2004. I joined BASF Aktiengesellschaft (which converted into BASF SE on January 14, 2008) in 2004, and have since been working in the field of insecticide screening and I am therefore fully conversant with the technical field to which the invention disclosed and claimed in application Serial No. 10/583003 belongs.

The tests were carried out under my supervision in accordance with the instructions given in the specification of Appl. Ser. No. 10/583003 or as described below.

Synergism can be described as an interaction where the combined effect of two or more compounds is greater than the sum of the individual effects of each of the compounds. The presence of a synergistic effect in terms of percent control, between two mixing partners (X and Y) can be calculated using the Colby equation (Colby, S. R., 1967, Calculating Synergistic and Antagonistic Responses in Herbicide Combinations, Weeds, 15, 20-22):

$$E = X + Y - \frac{XY}{100}$$

When the observed combined control effect is greater than the expected combined control effect (E), then the combined effect is synergistic.

The following tests demonstrate the control efficacy of compounds, mixtures or compositions of this invention on specific pests. However, the pest control protection afforded by the compounds, mixtures or compositions is not limited to these species. In certain instances, combinations of a compound of this invention with other invertebrate pest control compounds or agents are found to exhibit synergistic effects against certain important invertebrate pests.

The analysis of synergism or antagonism between the mixtures or compositions was determined using Colby's equation.

For evaluating control of green leafhopper (*Nephotettix virescens*), potted rice plants (2 week old) were treated with an acetone:water (50:50) solution at the desired concentrations of the mixing partner combined with the test compound using an atomizer at 25 psi until run-off. The treated plants were then kept inside a holding room for 2 hours to air dry the plants. The treated plants were then covered with insect screen and inoculated with 10 adult green leafhoppers. Each dose treatment was replicated three times. Green leafhopper mortality was then visually assessed at 24, 48 and 72 hours after inoculation. For the mixture tested the average results are listed in table 1.

Table 1 - Green Leaf Hopper


ppm [1.32 + Fipronil]	Average Control % 24h	Average Control % 48h	Average Control % 72h
500 + 0	6.7	17	17
0 + 500	0	30	37
Expected 500 + 500	6.7	42	48
Observed 500 + 500	16.7*	48*	63*

*synergistic control effect according to Colby's equation

The test results show that the observed mortality was higher than the expected mortality calculated using *Colby's* formula, i.e., the active ingredients interacted synergistically when combined with one another.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 101 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at D-67117 Limburgerhof, this 11 day of August, 2010


(Signature of Declarant)